

REMARKS

Applicants respectfully traverse and request reconsideration.

Claim 11 has been amended to add inherent language. New claim 35 has been added. No new matter is believed to have been added.

Applicants wish to thank the Examiner for the notice that claims 14, 15, 17, 18, 19, 21, 22 and 23 are considered allowable, and that Applicants' arguments filed 11 April 2007 with respect to claims 4, 9, 27 and 31 have been fully considered and are persuasive. Applicants further note that while the Office Action Summary page of the current Office action lists claims 4, 9, 27 and 31 as being objected to, Applicants respectfully request that the Examiner specifically address these claims and indicate that they are either allowable or that they merely stand objected to but would be allowable if rewritten in independent form including all of the limitations of their respective base claims and any intervening claims.

Claims 1, 2, 5-7, 10, 11, 24, 25, 26, 28-30 and 32-34 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,742,139 to Forsman et al. ("Forsman"). Claims 12 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Forsman in view of U.S. Patent Application Publication No. 2002/0093505 to Hill et al. ("Hill").

Regarding claim 1, as noted in Applicants' previous responses, Forsman teaches a method for reestablishing communications between a host processor and a service processor after the service processor has ceased to function correctly (Abstract). The host processor and service processor exchange heartbeat signals (Abstract; column 4, lines 9-23). If the host detects heartbeat signals, this indicates that the service processor is functioning properly (column 4, lines 9-12). If the host detects a loss or absence of heartbeat signals from the service processor, this indicates that the service processor is not functioning correctly, and as such the host processor causes a hard reset of the service processor (column 4, lines 12-35). Neither the portions of

Forsman cited by the Office Action (column 4, lines 9-12 and 25-35) nor any other portions of Forsman appear to teach detecting a hang in a co-processor by detecting a discrepancy between a current state of the co-processor and a current activity of the co-processor. The heartbeat signals appear to indicate the operating state of the service processor; they are not some activity that is compared with the operating state of the service processor to detect some difference or inconsistency between the two.

In the Office action Response to Arguments section (page 9), the Office action maintains its rejection and notes the following.

When the heartbeat signals indicate that the a service processor is active and working correctly (column 1, lines 35-37). When the host fails to detect a heartbeat signal, it is a discrepancy between the current state (i.e.: active and working correctly) and the current activity (no heartbeat signal).

[A]pplicant states that the heartbeat signal is capable of indicating only one of two things: functioning or not functioning, and appears to reason that the claims require more than these two states. However, this is an improperly imposed limitation, as the claims only require detection of a discrepancy. In Forsman, a heartbeat signal indicates no discrepancy, and no heartbeat signal indicates a discrepancy. There is no requirement in the claims that the current state and the current activity are detected.

Addressing first the Office action's assertion that "[w]hen the host fails to detect a heartbeat signal, it is a discrepancy between the current state (i.e.: active and working correctly) and the current activity (no heartbeat signal)", Applicants note that the Office action appears to be equating the claimed current activity with the presence or absence of the heartbeat signal and to be equating the claimed current state with the active and working correctly or non-active and not working correctly status of the co-processor. Adopting, for argument's sake, the Office action's framework and respective association of the claimed current activity and current state as noted above, Applicants respectfully submit that at the time of a failure to detect heartbeat

signals, the current state of service processor in Forsman is not active and working correctly. Conversely, at the time of a detection of heartbeat signals, the current state of the service processor in Forsman is active and working correctly. In other words, the receipt of or failure to receiving heartbeat signals does not appear to be capable of indicating a discrepancy between a current state of the co-processor and a current activity of the co-processor as claimed let alone a discrepancy of any sort. Instead, it appears that the Office Action is ignoring the adjective “current” in the claim term “current state” in order to fabricate a discrepancy between the claimed current state and the claimed current activity when no such discrepancy exists.

To further illustrate this point, Applicants repeat the above quotation from the Response to Arguments section: “[w]hen the host fails to detect a heartbeat signal, it is a discrepancy between the current state (i.e.: active and working correctly) and the current activity (no heartbeat signal).” In other words, the Office Action asserts the following proposition:

- (A) the failure to detect a heartbeat signal is a discrepancy between:
- (B) the lack of heartbeat signals, and
- (C) the service processor being active and working correctly.

Initially, Applicants note that proposition element A appears to be co-extensive with proposition element B to the extent that Forsman appears to teach that when there is a lack of heartbeat signals there will be a failure to detect a heartbeat signal, and when there is not a lack of heartbeat signals there will not be a failure to detect a heartbeat signal. With this understanding, the above proposition is facially illogical. For instance, the failure to detect a heartbeat signal (i.e., proposition element A) cannot be a discrepancy or indicate a discrepancy between the lack of heartbeat signals (i.e., proposition element B) and the service processor being active and working correctly (proposition element C) because this is analogous to saying that the failure to

detect a heartbeat signal is a discrepancy between itself and the service processor being active and working correctly. In other words $A \neq A + C$ and $B \neq B + C$.

Instead, Forsman appears to solely use a heartbeat signal (specifically the presence or absence of a heartbeat signal) and nothing else to determine whether to reset the service processor. The heartbeat signal is at best, and solely for the sake of argument, capable of indicating one of Applicants' claimed current state of the co-processor (as used above by the Office Action on at least page 9) or Applicants' claimed current activity of the co-processor. Thus, the heartbeat signal cannot possibly be capable of detecting a discrepancy between a current state and a current activity of the co-processor.

Addressing the Office action's second assertion that "[Applicants appear] to reason that the claims require more than these two states [i.e., function or not functioning and that] this is an improperly imposed limitation, as the claims only require detection of a discrepancy." (Office action, p. 9). Applicants respectfully disagree. Claim 1 expressly requires, among other things, detecting 'a hang in the co-processor by detecting a discrepancy between a current state of the co-processor and a current activity of the co-processor.' (Claim 1, emphasis added). To state that the claims only require detection of a discrepancy is facially wrong. Claim 1 alone requires something more than the detection of a discrepancy as highlighted above. Moreover, in addition to the remarks made above, Applicants respectfully submit that Forsman simply does not teach detecting any discrepancy, difference, or inconsistency whatsoever between a current state of the co-processor and a current activity of the co-processor in order to detect a hang. Forsman detects one thing - the presence or absence of heartbeat signals - and based on this detection, knows whether the service processor is or is not functioning correctly.

For each of the foregoing reasons, Applicants respectfully submit that claim 1 is in condition for allowance.

As to claims 6 and 24, Applicants note that these claims include the same or similar limitations as those in claim 1. For at least this reason, Applicants respectfully submit that claims 6 and 24 are in condition for allowance.

As to claim 26, the Office Action cites Forsman, column 4, lines 9-12 and 25-45 as teaching detecting a hang in the co-processor by detecting a discrepancy between a current state of the co-processor and data in one or more storage elements associated with the co-processor, wherein the data in the one or more storage elements represents a current activity of the co-processor. Applicants respectfully submit that these cited portions appear to be silent on, among other things, detecting a discrepancy between a current state of the co-processor and data in one or more storage elements associated with the co-processor for the purpose of detecting a hang in the co-processor. As to the teachings of column 4, lines 9-12 and 25-35, Applicants respectfully reassert the relevant remarks made above as to the deficiencies of these portions. As to column 4, lines 35-45, Applicants note that this portion teaches that the host processor checks a status/control register of the service processor to determine if conditions exist that preempt the host from resetting the service processor. However, the host processor performs this checking of the status/control register after it has been determined that the service processor is to be reset, i.e., after it has been determined that the service processor is not functioning correctly. The checking of the status/control register is not performed in the process of detecting a hang or to detect a hang as required by the claim. Thus, assuming solely for the sake of argument that the cited portion of Forsman teaches detecting a discrepancy between a current state of the co-processor and data in one or more storage elements associated with the co-processor, a position

Applicants do not take, Applicants respectfully submit that such detection would not occur for the purpose of detecting a hang as required by the claim. For at least this reason, claim 26 is believed to be allowable.

As to claims 30 and 34, Applicants note that these claims include the same or similar limitations as those in claim 26. For at least this reason, Applicants respectfully submit that claims 30 and 34 are in condition for allowance.

As to claim 11, the Office Action states that Forsman teaches a halt communications module operative to halt command communications with the co-processor, in response to detecting a hang in the co-processor. In particular, the Office Action states that column 5, lines 16-22 of Forsman teach waiting for a predetermined timeout period for the service processor to respond to the reset signal and that because “no communications occur for this period of time” (Office Action, page 10), Forsman teaches the above limitation. Initially, Applicants respectfully disagree because any response to the reset signal in the system of Forsman would not appear to be a command communication. Even assuming for the sake of argument that such a response would be a command communication, Applicants nonetheless disagree with the Office Action’s interpretation of Forsman because, among other reasons, waiting for a predetermined timeout period does not preclude communication. In some instances, communication (*i.e.*, the response from the service processor to the reset warning signal) may occur, and in some instances it may not occur; Forsman teaches that communication is possible. However, even when communications do not occur in Forsman, such a situation is not the result of a halting of command communications by a halt communications module because the halting of command communications by a halt communications module would preclude any further command

communications from occurring, not merely create the possibility that further command communications might not occur.

Notwithstanding the above deficiencies of Forsman, to expedite prosecution, Applicants have amended claim 11 to include inherent language. Amended claim 11 recites, in part, a halt communications module operative to halt executable instruction communications with the co-processor, in response to detecting a hang in the co-processor. This amendment is supported by at least, for example, paragraph [0041], first sentence. Accordingly, assuming solely for the sake of argument that the possible failure of the service processor to respond to the reset warning signal constitutes “halting,” it nonetheless does not appear to constitute halting of an executable instruction communication.

For one or more of the foregoing reasons, among other reasons, Applicants respectfully submit that claim 11 is in condition for allowance.

As to new claim 35, Applicants respectfully submit that this claim is in condition for allowance at least in view of its dependency on claim 1 and further in view of the remarks set forth above. Namely, Forsman appears to teach that a lack of heartbeat signals by itself indicates that the service processor is not functioning correctly. Forsman therefore does not appear to teach detecting a hang in a co-processor by comparing data representing a current state of the co-processor with data representing a current activity of the co-processor. Accordingly, for at least these reasons, Applicants respectfully submit that claim 35 is in condition for allowance.

Dependent claims 2, 5, 7, 10, 12-13, 25, 28-29 and 32-33 add novel and non-obvious subject matter and are each believed to be allowable at least in view of their dependence upon one of the allowable base claims.

Accordingly, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that a timely Notice of Allowance be issued in this case. The Examiner is invited to contact the below-listed attorney if the Examiner believes that a telephone conference will advance the prosecution of this application.

Respectfully submitted,

Date: August 27, 2007

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